



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/856,211	05/18/2001	Vincent Derycke	33585	6755

7590

08/19/2003

Pearne Gordon McCoy & Granger  
1200 Leader Building  
Cleveland, OH 44114

EXAMINER

SONG, MATTHEW J

ART UNIT

PAPER NUMBER

1765

DATE MAILED: 08/19/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Advisory Action**

Application No.

09/856,211

Applicant(s)

DERYCKE ET AL.

Examiner

Matthew J Song

Art Unit

1765

--The MAILING DATE of this communication appears on the cover sheet with the corresponding address--

THE REPLY FILED 07 August 2003 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE. Therefore, further action by the applicant is required to avoid abandonment of this application. A proper reply to a final rejection under 37 CFR 1.113 may only be either: (1) a timely filed amendment which places the application in condition for allowance; (2) a timely filed Notice of Appeal (with appeal fee); or (3) a timely filed Request for Continued Examination (RCE) in compliance with 37 CFR 1.114.

**PERIOD FOR REPLY [check either a) or b)]**

- a) ☒ The period for reply expires 5 months from the mailing date of the final rejection.
- b) ☐ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection. ONLY CHECK THIS BOX WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

1. ☐ A Notice of Appeal was filed on \_\_\_\_\_. Appellant's Brief must be filed within the period set forth in 37 CFR 1.192(a), or any extension thereof (37 CFR 1.191(d)), to avoid dismissal of the appeal.
2. ☒ The proposed amendment(s) will not be entered because:
- (a) ☐ they raise new issues that would require further consideration and/or search (see NOTE below);
  - (b) ☐ they raise the issue of new matter (see Note below);
  - (c) ☒ they are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
  - (d) ☐ they present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: \_\_\_\_\_

3. ☐ Applicant's reply has overcome the following rejection(s): \_\_\_\_\_.
4. ☐ Newly proposed or amended claim(s) \_\_\_\_\_ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
5. ☒ The a) ☐ affidavit, b) ☐ exhibit, or c) ☒ request for reconsideration has been considered but does NOT place the application in condition for allowance because: see continuation sheet.
6. ☐ The affidavit or exhibit will NOT be considered because it is not directed SOLELY to issues which were newly raised by the Examiner in the final rejection.
7. ☐ For purposes of Appeal, the proposed amendment(s) a) ☒ will not be entered or b) ☐ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.

The status of the claim(s) is (or will be) as follows:

Claim(s) allowed: \_\_\_\_\_

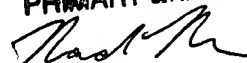
Claim(s) objected to: \_\_\_\_\_

Claim(s) rejected: 1-14.

Claim(s) withdrawn from consideration: \_\_\_\_\_

8. ☐ The proposed drawing correction filed on \_\_\_\_\_ is a) ☐ approved or b) ☐ disapproved by the Examiner.
9. ☐ Note the attached Information Disclosure Statement(s) (PTO-1449) Paper No(s). \_\_\_\_\_
10. ☐ Other: \_\_\_\_\_

NADINE G. NORTON  
PRIMARY EXAMINER



***Response to Arguments***

1. Continuation of 5. NOTE:

Applicant's argument that Yoder does not teach a monoatomic layer has been considered but is not found persuasive. Yoder teaches an atomic layer epitaxy of a diamond film. Yoder also teaches forming a diamond layer, which is thicker than one atomic layer, as suggested by applicant. However, Atomic layer epitaxy, by definition forms a monoatomic layer during the first cycle of forming a thicker layer, note column 11, lines 62-66. Therefore, the intermediate product of Yoder, which is one atomic layer thick, reads on applicant's monoatomic layer.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., transformation technique (pg 10-11)) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Applicant argument that one skilled in the art would not be led to the invention because the cited prior art contemplate the use of substrates having lattice constants close to the deposited materials is noted but is not found persuasive. Beta Silicon carbide is taught by Dreifus et al to be a substrate with a relatively close lattice match with diamond and beta silicon carbide has a 22% difference between the lattice constant of diamond. The cited prior art does teach using substrates with a lattice constant close to the deposited layer, namely copper and boron nitride, as suggested by applicant. However, the prior art also recognizes using other substrates for the formation of diamond, such as beta silicon carbide, which is still relatively closely matched to diamond, but larger than copper and boron nitride, note column 15, lines 20-27 of Dreifus.

Applicant's argument that the process disclosed by Liu et al does not make it possible to obtain a monoatomic layer is noted but is not found persuasive. It is the Examiner's position that applicant's statement is mere attorney argument, which lacks evidence; therefore is not considered persuasive.

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Liu et al is relied upon as a method of heating a material to obtain diamond. Liu obtains other diamond materials, which are not entirely  $sp^3$  hybridized, as suggested by applicant, but Liu does not teach using the same substrate as applicant. The substrate is taught by Powers et al. The rejection is based using the substrate of Powers in the process of forming diamond taught by Liu to obtain diamond. It is the examiner's position that heating the SiC material taught by Powers according to the process taught by Liu would inherently produce a monoatomic layer of diamond because the process and material is similar to the process taught by applicant, note instant claim 11.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., no fast cooling step) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Liu teaches a heating step, therefore reads on applicant's claim. Liu also teaches a cooling step, which is not taught by applicant, however the instant claims do not have a limitation where cooling does not take place.

Application/Control Number: 09/856,211  
Art Unit: 1765

Page 4

Applicant's argument the process in Liu et al cannot take place in an ultra-vacuum is noted but is not found persuasive. It is the Examiner's position that applicant's statement is mere attorney argument, which lacks evidence; therefore is not considered persuasive.

NADINE G. NORTON  
PRIMARY EXAMINER

